Appln. No.: 10/540,933

Shchukin et al.

Reply to Office Action of October 10, 2006

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A method for enhancing effectiveness of rotor blade of wind energy

device, characterized in that a rotor blade is made in the form of a wing with a thick aerodynamic

profile and a vortex system for control of the boundary layer is arranged on the rear part of the

blade opposite the side facing the wind, this system consisting of longitudinal cavities with

central bodies forming annular channels, and suction withdrawal of air is carried out from the

cavities and central bodies through air vents into receivers, which are connected by air ducts to a

low pressure receiver inside the blade, air from which due to centrifugal forces of a rotating

blade and also because of the difference in pressure occurring at a blade shank and end of the

blade because of the large sum velocity of the air at the end of the rotating blade, is sucked out to

the end of the blade through an air duct, wherein plates limiting the air flow flowing off along

the blade are mounted inside the cavity and on the outer surface of the blade.

Claim 2 (Currently Amended): The method according to claim 1, characterized in that the

low pressure receiver is combined with the cavity receivers and the receivers of the central

bodies and suction withdrawal of air takes place from it-the low pressure receiver into the

environment.

Claim 3 (Currently Amended): The method according to claim 1, characterized in that the

low pressure receiver is combined with the cavity receivers and suction withdrawal of the air

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takes place from it-the low pressure receiver and the receivers of the central bodies into the

environment.

Claim 4 (Currently Amended): The method according to claim 1, characterized in that the

low pressure receiver is combined with the receivers of the central bodies and suction withdrawal

of the air takes place from it-the low pressure receiver and the cavity receivers into the

environment.

Claim 5 (Currently Amended): The method according to claim 1, characterized in that in

order to optimize the value of the suction withdrawal of air from the low pressure receiver, from

the cavity receivers and the receivers of the central bodies at different modes of rotation of the

rotor of the WED wind energy device and for effective neutralization of the action of excessively

high speeds of the wind on the rotor of the WED wind energy device, elements controlling the

consumption of air are mounted on air lines.

Claim 6 (Original): The method according to claim 1, characterized in that the

withdrawal of air is carried out by means of a turbine.

Claim 7 (Original): The method according to claim 1, characterized in that air is blown

into the vortex rotating in the cavity of the blade.

Claim 8 (Original): A method of enhancing the effectiveness of operation of a rotor blade

of a wind energy device, characterized in that suction withdrawal of air to the end of a blade is

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carried out from centrifugal forces of a rotating blade, and also because of pressure difference

occurring at the blade shank and end of the blade because of the high sum speed of air at the end

of the rotating blade, wherein the rotor blade is made in the form of a wing with a thick

aerodynamic profile and a vortex system for control of the boundary layer, consisting of

longitudinal cavities, is arranged on the rear part of the blade from the side opposite the wind.

Claim 9 (Original): The method according to claim 8, characterized in that from each

cavity through air vents with elements controlling air consumption, suction withdrawal of air is

carried out into the low pressure receiver, air from which due to centrifugal forces of a rotating

blade and also due to pressure difference occurring at the blade shank and end of the blade as a

result of a high sum speed of the air at the end of the rotating blade, is suction withdrawn to the

end of the blade through an air line.

Claim 10 (Original): The method according to claim 8, characterized in that plates are

mounted inside the cavity and on the outer surface of the blade to limit the air flow flowing off

along the blade.

Claim 11 (Original): The method according to claim 8, characterized in that suction

withdrawal of air is carried out by means of a turbine.

Claim 12 (Original): The method according to claim 8, characterized in that blowing air

is carried out into the vortex rotating in the cavity of the blade.

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